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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/837,885 | 04/18/2001 | Jun Liu | 1941-76 | 1062 |

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EXAMINER

CHANG, VICTOR S

ART UNIT PAPER NUMBER

1771

DATE MAILED: 11/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/837,885

Applicant(s)

LIU ET AL.

TA

Examiner

Victor S Chang

Art Unit

1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,53,55 and 75-78 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,53,55 and 75-78 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Introduction

1. The Examiner has carefully considered Applicants' amendments and remarks filed on 10/28/2004. Applicants' amendments to claims 1, 53, 75, cancellation of claims 4 and 79-92 have been entered.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Rejections not maintained are withdrawn.

Rejections Based on Prior Art

4. Claims 1-3, 53, 55 and 75-78 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brinker et al. (US 5858457) in view of Cho et al. (US 5504042), generally as set forth in section 4 of Office action dated 7/29/2004, together with the following response to argument.

First, the Examiner repeats the relied upon prior art as follows: Brinker's invention is directed to a family of supported silica films with pore size in the approximate range 0.8-20 nm. Optically transparent, 100-500-nm (i.e., 0.1-0.5 μ m) thick films exhibiting a unique range of microstructures and uni-modal pore sizes are formed. Applications of the film include low dielectric constant interlayers, etc. (Abstract). In Example 5, the film dielectric constant is determined to be 2.37 (column 9, line 29). Brinker lacks a teaching that the silica film has been dehydroxylated to

improve its relative and absolute stabilities. However, it is noted that Cho's invention is directed to an improved porous structure with improved dielectric properties by dehydroxylate the pore surfaces (Abstract). This surface modification typically replaces reactive surface groups such as hydroxyls and alkoxyls with more stable surface groups such as methyl groups (column 4, lines 35-37).

It is noted that newly amended independent claim 1 now recites *inter alia* "having a disordered porosity, lacking a regular geometric arrangement of pores, and characterized by an absence of an x-ray diffraction peak in the range from 2-6 degrees 2-theta." Further, in independent claims 53 and 75, the limitation "x-ray diffraction peak between about 0.75 and about 2 degrees 2-theta or" is deleted from each claim.

With respect to Applicants' argument "Applicants have amended claim 1 to require that the disordered porosity be demonstrated by 'an absence of an x-ray diffraction peak in the range 2-6 degrees 2-theta.' This is not shown nor suggested by Brinker. Figure 8 clearly shows a peak between 2-3 degrees 2-theta. Therefore, there is not an absence of a peak between 2-6 degrees 2-theta." (Remarks, page 5, third paragraph), the Examiner notes while Fig. 8 shows a peak between 2-3 degrees 2-theta for a sample which was pre-conditioned at 60% RH and having a maximized order (column 4, lines 52-59), it should be noted that Fig. 8 also shows sample pre-conditioned at 25% RH (see trace symbol Δ), which clearly shows an absence of an x-ray diffraction peak in the range from 2-6 degrees 2-theta, and taught by Brinker as having poor order (i.e., disordered) (column 10, lines 15-29), Applicants argument to the contrary notwithstanding.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor S Chang whose telephone number is 571-272-1474. The examiner can normally be reached on 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel H Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

VSC
Victor S Chang
Examiner
Art Unit 1771

11/4/2004


TERREL MORRIS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700